



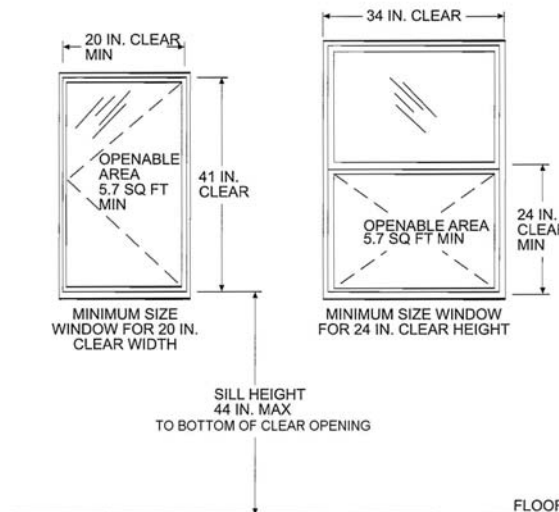
WINDOW, DOOR, AND SKYLIGHT INSTALLATION OR REPLACEMENT

Permits are required for the replacement or installation of skylights, windows, and doors. Colorado State law and currently adopted codes require carbon monoxide alarms to be installed per the manufacturer's written installation instructions within 15 feet of the entry to each sleeping room when alterations or repairs requiring a building permit occur in homes having fuel fired appliances or an attached garage. Final inspections of window, door and skylight installation or replacement will include verification of carbon monoxide alarms. Carbon monoxide alarms shall be fully battery powered; plug-connected into a dwelling's unswitched electrical outlet and include a battery backup; wired into a dwelling's electrical system and include a battery back-up; or connected to an electrical system via an electrical panel. Approved combination smoke/ carbon monoxide alarms may be used.

Provide a **floor plan** indicating the location of all new or replacement windows, including identification of each room. For new installations or any change in opening size, plans shall include a sketch indicating the framing for the floor and roof above, the size of the opening, and any framing changes and headers to be installed. New or enlarged window openings in basement walls require an engineered plan for the proper support of the foundation during and after cutting.

Non-complying windows in basements or sleeping rooms shall be modified to meet the current egress window and window well requirements. Individual hardship situations will be evaluated on a case by case basis. Replacement windows in sleeping rooms or basements without sleeping rooms shall comply with the required openable egress area, width, and height. The finished sill height shall not be increased unless it complies with the current code for egress openings. Egress window and window well requirements are:

- Every sleeping room (or basement without sleeping room) shall have one exterior door or **escape and rescue window** with a minimum of 5.7 sq. ft. of net clear opening. The minimum height of this clear opening shall be at least 24". The minimum width of the clear opening shall be at least 20". Note that a window with both the minimum width and the minimum height cannot be used to achieve the 5.7 square foot net clear opening required. Windows at grade floor are permitted to have not less than 5.0 square feet of openable area. All escape and rescue windows shall have a sill height not more than 44 inches measured from the finished floor to the **bottom of the clear opening**. IRC Section R310.1.
- **Egress window wells** are required for all emergency escape and rescue windows below grade. Egress window wells shall have a minimum accessible net clear opening of 9 sq. ft. (minimum dimension of 36" in both directions) with the window in the fully open position. Window wells with a vertical depth of more than 44" shall be equipped with an approved, permanently affixed ladder or stairs that are accessible with the window in the fully open position. New or replaced window wells shall be provided with proper drainage by connecting to the building's foundation drainage system or other approved means. IRC Section R310.2.1.



For SI: 1 inch = 25.4 mm, 1 square foot = 0.0929 m².

Figure R310.1
EMERGENCY ESCAPE AND RESCUE WINDOW

New doors, windows, and skylights are required to meet the current standards **for energy conservation** (IECC Section R402 for residential and Section C402.3 for commercial applications) and shall be labeled to indicate compliance with AAMA/WDMA/CSA 101/I.S.2/A440. :

Thermal Transmittance

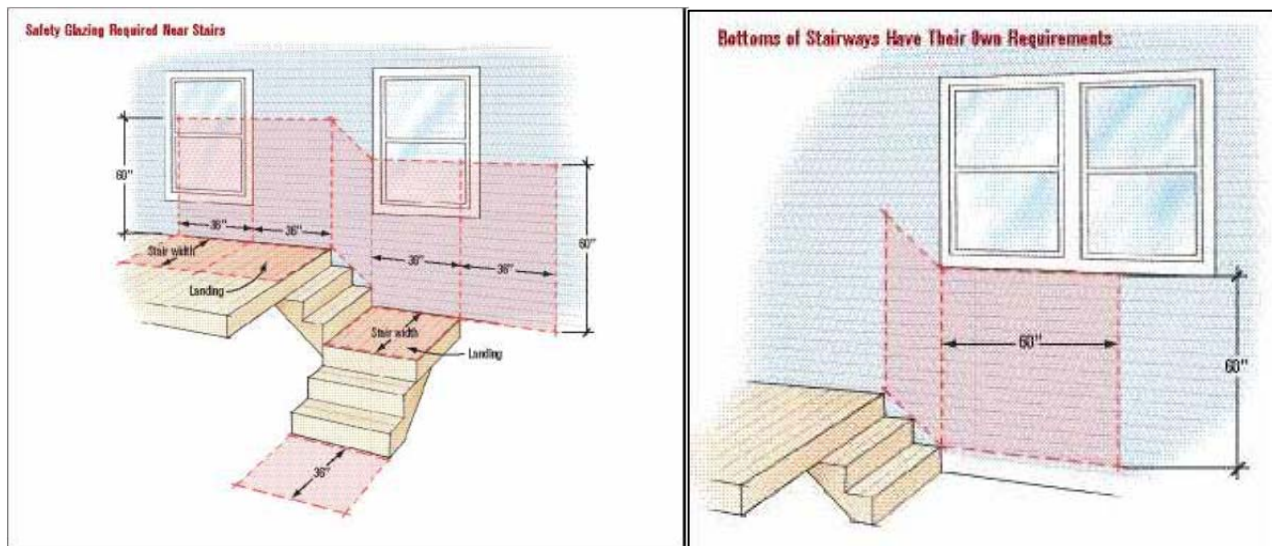
Air Infiltration Rate

- Doors and windows maximum U-value: 0.32
- Skylight maximum U-value: 0.55
- Windows, skylights, and sliding doors: 0.3 cfm/ft²
- Swinging doors: 0.5 cfm/ft²

All openings shall be flashed to create a weather resistive barrier per IRC R703.1 and IBC 1403.2. Skylights may require a 4 inch high curb and/or screening below the skylight; see IRC R308.6.8 and IBC 2405.4.

Safety glazing is required for all hazardous locations subject to human impact, per IRC Section 308.4 and IBC 2406 including but not limited to the following:

- Within a 24" arc of either vertical edge of a door (except in a wall perpendicular to the door other than the wall toward which the door swings);
- Within 5 feet of stairways and landings;
- In bathtub & shower enclosures and adjacent to hot tubs, spas or pools or within 5 feet of any of these.



For **fall protection**, in locations where the opening of an operable window is more than 72 inches above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches above the finished floor of the room in which it is located for one and two family dwellings, and shall be a minimum of 36 inches above the finished floor of the room in which it is located for Occupancy Groups R-2 and R-3. Approved window guards or limited opening sizes may be used in certain situations. IRC Section R312.2, IBC Section 1013.8. See figure R612.2 below.

